

WHAT IS CLAIMED IS:

1. A multi-meandered antenna with multiple bands and single input using in a vehicle wireless communication environment, comprises:

an input end, coupled to a metal body of said vehicle for getting a wireless
5 signal; and

at least one meandered antenna, coupled to said input end for transmitting or receiving said wireless signal;

whereby, said multi-meandered antenna with multiple bands and single input can satisfy the various wireless communication requirements of said vehicle after
10 combining.

2. A multi-meandered antenna with multiple bands and single input as claimed in claim 1, wherein said various wireless communication requirements comprise: AM/FM broadcasting, television, digital audio broadcasting and mobile communications, etc.

15 3. A multi-meandered antenna with multiple bands and single input as claimed in claim 1, wherein said metal body is the roof of said vehicle.

4. A multi-meandered antenna with multiple bands and single input as claimed in claim 1, wherein the shape of said meandered antenna is: the first end of said meandered antenna extending right a first horizontal segment and extending upward
20 a first vertical segment, extending left a second horizontal segment and extending upward a second vertical segment, extending right a third horizontal segment and extending downward a third vertical segment, and extending left a fourth horizontal segment and extending downward a fourth vertical segment.

5. A multi-meandered antenna with multiple bands and single input as claimed
25 in claim 4, wherein the lengths of said first vertical segment, said second vertical segment, said third vertical segment and said fourth vertical segment are equal.

6. A multi-meandered antenna with multiple bands and single input as claimed in claim 4, wherein the lengths of said first horizontal segment and said second horizontal segment are equal.

7. A multi-meandered antenna with multiple bands and single input as claimed
5 in claim 4, wherein said input end is fed into the right side of said third horizontal segment at about 1/3 length.

8. A multi-meandered antenna with multiple bands and single input as claimed in claim 4, wherein the length of said third horizontal segment is greater than the length of said first horizontal segment and greater than the length of said fourth
10 horizontal segment.

9. A multi-meandered antenna with multiple bands and single input as claimed in claim 1, wherein said at least one meandered antenna further comprises a first meandered antenna and a second meandered antenna.

10. A multi-meandered antenna with multiple bands and single input as claimed
15 in claim 9, wherein the shape of said first meandered antenna is: the first end of said first meandered antenna extending right a first horizontal segment and extending upward a first vertical segment, extending left a second horizontal segment and extending upward a second vertical segment, extending right a third horizontal segment and extending downward a third vertical segment, extending left a fourth
20 horizontal segment and extending downward a fourth vertical segment and extending right a fifth horizontal segment.

11. A multi-meandered antenna with multiple bands and single input as claimed in claim 9, wherein the shape of said second meandered antenna is: the first end of said second meandered antenna extending right a first horizontal segment and
25 extending upward a first vertical segment, extending left a second horizontal segment and extending upward a second vertical segment, extending right a third horizontal

segment and extending downward a third vertical segment and extending left a fourth horizontal segment.

12. A multi-meandered antenna with multiple bands and single input as claimed in claim 10, wherein the lengths of said first horizontal segment and said second
5 horizontal segment are equal.

13. A multi-meandered antenna with multiple bands and single input as claimed in claim 10, wherein the length of said third vertical segment is greater than the length of said second vertical segment and greater than the length of said first vertical segment and greater than the length of said fourth vertical segment.

10 14. A multi-meandered antenna with multiple bands and single input as claimed in claim 10, wherein the length of said third horizontal segment is greater than the length of said fourth horizontal segment and greater than the length of said first horizontal segment and greater than the length of said fifth horizontal segment.

15 15. A multi-meandered antenna with multiple bands and single input as claimed in claim 10, wherein said input end is fed into the right side of said third horizontal segment at about 1/3 length.

16. A multi-meandered antenna with multiple bands and single input as claimed in claim 11, wherein the lengths of said first horizontal segment and said second horizontal segment are equal.

20 17. A multi-meandered antenna with multiple bands and single input as claimed in claim 11, wherein the lengths of said first vertical segment, said second vertical segment and said third vertical segment are equal.

18. A multi-meandered antenna with multiple bands and single input as claimed in claim 11, wherein the length of said third horizontal segment is greater than the

length of said first horizontal segment and greater than the length of said fourth horizontal segment.

19. A multi-meandered antenna with multiple bands and single input as claimed in claim 11, wherein said input end is fed into the right side of said third horizontal
5 segment at about 1/3 length.

20. A multi-meandered antenna with multiple bands and single input using in a vehicle wireless communication environment, comprises:

an input end, coupled to a metal body of said vehicle for getting a wireless signal;

10 at least one meandered antenna, coupled to said input end for transmitting or receiving said wireless signal; and

a loop antenna, coupled to said input end for enclosing said meandered antenna therein;

whereby, said multi-meandered antenna with multiple bands and single input can
15 satisfy the various wireless communication requirements of said vehicle by combining said meandered antenna with said loop antenna.

21. A multi-meandered antenna with multiple bands and single input as claimed in claim 20, wherein the shape of said meandered antenna is: the first end of said meandered antenna extending right a first horizontal segment and extending upward
20 a first vertical segment, extending left a second horizontal segment and extending upward a second vertical segment, extending right a third horizontal segment and extending downward a third vertical segment, and extending left a fourth horizontal segment and extending downward a fourth vertical segment.

22. A multi-meandered antenna with multiple bands and single input as claimed
25 in claim 20, wherein said various wireless communication requirements comprise:

AM/FM broadcasting, television, digital audio broadcasting and mobile communications, etc.

23. A multi-meandered antenna with multiple bands and single input as claimed in claim 20, wherein said metal body is the body of said vehicle.

5 24. A multi-meandered antenna with multiple bands and single input as claimed in claim 21, wherein the lengths of said first vertical segment, said second vertical segment, said third vertical segment and said fourth vertical segment are equal.

25. A multi-meandered antenna with multiple bands and single input as claimed in claim 21, wherein the lengths of said first horizontal segment and said second
10 horizontal segment are equal.

26. A multi-meandered antenna with multiple bands and single input as claimed in claim 21, wherein said input end is fed into the right side of said third horizontal segment at about 1/3 length.

27. A multi-meandered antenna with multiple bands and single input as claimed
15 in claim 21, wherein the length of said third horizontal segment is greater than the length of said first horizontal segment and greater than the length of said fourth horizontal segment.